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10/790,935	03/02/2004	Takeshi Saito	0828.69843	3241

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EXAMINER	
ALIA, CURTIS A	

ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/790,935	SAITO ET AL.	
	Examiner	Art Unit	
	Curtis Alia	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *02 March 2004, 29 October 2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-12 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claimed invention is not directed to a process, machine, manufacture, or composition of matter, or any new and useful improvement thereof. Claims 1-5 are drawn to a "communication control program" and claims 6-12 are drawn to "a content delivery program," where no physical connection to the computer exists. In order for the functional and structural relationship between the computer program instructions and their execution to be clear, there must be some connection between the computer program instructions and the physical device executing the instructions through a computer-readable medium that meets the statutory requirements as set forth in the guidelines in MPEP 2106.01 [R-6].

> When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4, 13 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Michaelis et al. (US 7,065,367).

For claim 1, Michaelis discloses a computer program (see column 10, lines 23-24) comprising (a) detecting at least one of the plurality of network interfaces which is currently available for communication (see column 1, lines 50-53, a set of interfaces are selected based on rules to determine if they are qualified for packet transfer), (b) detecting at least one of the plurality of network interfaces by referring to an interface information table (see column 7, lines 24-34, access control lists keep track of meta information pertaining to parameters and properties of each interface) in which numerical values are related to a predetermined attribute of the plurality of network interfaces are set (see column 7, lines 25-28, QoS, cost, latency, etc. are among the attributes that are taken into account for each interface), and recognizing at least one priority of the at least one of the plurality of network interfaces based on the numerical values (see column 7, lines 31-34, the ACL information is used to determine the interface priorities, and the highest priority interface is selected for use) and (c) performing data communication through the network interface determined in step (b) (see column 7, lines 31-34, processor selects the highest priority interface based on the ACL rules).

For claim 2, Michaelis discloses that the numerical values represent bandwidths of the plurality of networks (see column 3, lines 51-59, a network interface can be qualified and prioritized based on many properties, including bandwidth).

For claim 3, Michaelis discloses that the process further comprises the steps of (d) measuring an effective transfer rate through one of the plurality of network interfaces when data communication is performed through the one of the plurality of network interfaces (see column 4, lines 1-3 and 23-30, interface is monitored on a packet-by-packet basis for changes in priority based on any of the attributes mentioned, including bit rate at which data can be transmitted) and (e) updating one of the properties of the one of the plurality of network interfaces based on the measured effective transfer rate (see column 9, lines 14-24).

For claim 4, Michaelis discloses that the process further comprises the steps of (d) measuring an effective transfer rate through one of the plurality of network interfaces when data communication is performed with a terminal through the one of the plurality of network interfaces (see column 4, lines 1-3 and 23-30, interface is monitored on a packet-by-packet basis for changes in priority based on any of the attributes mentioned, including bit rate at which data can be transmitted) and (e) updating one of the properties of the one of the plurality of network interfaces based on the measured effective transfer rate (see column 9, lines 14-24).

For claim 13, Michaelis discloses a terminal comprising the plurality of network interfaces which can be connected to a plurality of networks (see column 1, lines 50-53, a set of interfaces are selected based on rules to determine if they are qualified for packet transfer), an available-interface detection unit which detects at least one of the plurality of network interfaces which is currently available for communication (see column 1, lines 50-53, a set of interfaces are selected based on rules to determine if they are qualified for packet transfer), a network-interface selection unit which determines a network interface having a highest priority among the at least one of the plurality of network interfaces by referring to an interface information table in which

numerical values related to a predetermined attribute of the plurality of network interfaces are set, and recognizing at least one priority of the at least one of the plurality of network interfaces based on the numerical value (see column 7, lines 31-34, the ACL information is used to determine the interface priorities, and the highest priority interface is selected for use), and a data communication unit which performs data communication through the network interface determined by the network-interface selection unit (see column 7, lines 31-34, processor selects the highest priority interface based on the ACL rules).

For claim 15, Michaelis discloses a method comprising (a) detecting at least one of the plurality of network interfaces which is currently available for use (see column 1, lines 50-53, a set of interfaces are selected based on rules to determine if they are qualified for packet transfer), (b) determining a network interface having a highest priority among the at least one of the plurality of network interfaces by referring to an interface information table in which numerical values related to a predetermined attribute of the plurality of network interfaces are set, and recognizing at least one priority of the at least one of the plurality of network interfaces based on the numerical values (see column 7, lines 31-34, the ACL information is used to determine the interface priorities, and the highest priority interface is selected for use), and performing data communication through the network interface determined in step (b) (see column 7, lines 31-34, processor selects the highest priority interface based on the ACL rules).

Claim Rejections - 35 USC § 103

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bohannon et al. (US 7,103,651).

For claim 5, Michaelis does not explicitly teach the steps of (d) acquiring one of the location information items corresponding to a bandwidth of the network interface determined in step (b), during data communication, and (e) acquiring the content by designating one of the locations by the acquired one of the location information items. Bohannon, from a similar field of endeavor, teaches the provision of selecting the most optimal content server in a distributed content environment using an internet site selector which optimizes the performance of domains

hosted on mirrored, geographically distributed sites (see column 5, lines 6-16). Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to utilize an internet site selector in determining the optimal content server to receive data from. The internet site selector teaching can be combined into the method of Michaelis by allowing signaling information to be transmitted between the terminal and the internet site selector to inform the site selector of the terminal's network interface bandwidth. The motivation to combine these teachings is that this bypasses the DNS solution that cannot determine how busy a content server is and that DNS servers sometimes contain old cached data that is no longer optimal.

8. Claims 6-7, 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karczewicz et al. (US 2002/0090027) in view of Kenyon et al. (US 6,973,475).

For claim 6, Karczewicz discloses a content delivery program comprising the steps of (b) determining a quality level of the content to be delivered to the terminal when bandwidth data indicating a bandwidth of a network to which the terminal is connected is received (see paragraph 17, lines 8-12, the bit rate used for encoding is determined in response to receiving indication of a permitted channel communication rate), generating the content at the quality level determined in step (b), and transmitting the content generated in step (c) to the terminal (see paragraph 17, lines 12-15, selected bit rate is used to encode the video data and sent to the receiver). Karczewicz does not explicitly teach preparing and storing quality-management information indicating correspondences between bandwidths and quality levels of the content. Kenyon, from the same field of endeavor, teaches the provision of using a table indicating various terminal operating characteristics, including bandwidth, and correlating these

characteristics with a specific quality video stream so that the terminal can receive the best quality that its resources are capable of processing (see column 5, lines 42-51, weights are given to certain operating characteristics of receiving terminals and the encoding rate is determined from the table defining the weights based on the receiver's operating characteristics). Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to employ a pre-compiled table of encoding rates corresponding to conditions of the receiving end, such as bandwidth limitation. The motivation to utilize the encoding rate table of Kenyon into the content delivery program of Karczewicz is that the CPU need not do any calculations for each receiving terminal requesting data transmission.

For claim 7, Karczewicz discloses that the content is data representing a moving image (video), and is generated at the quality level by removing a portion of frames constituting the data, according to the quality level determined in step (b) (see paragraph 17, lines 12-15, encoding rate is selected and selected video frames are encoded).

For claim 14, Karczewicz discloses a content server comprising a content generation unit which generates the content at the quality level determined by its quality determination unit (see paragraph 17, lines 8-12, the quality level is determined based on a received set of indicia associated with the receiver) and a content transmission unit which transmits to the terminal the content generated by the content generation unit (see paragraph 17, lines 12-15, encoded video is sent to the receiver via the communication channel). Karczewicz teaches of a quality determination unit, but does not explicitly teach the use of a quality determination unit that indicates correspondences between bandwidths and quality levels of the content. Kenyon teaches the provision of using a table indicating various terminal operating characteristics,

including bandwidth, and correlating these characteristics with a specific quality video stream so that the terminal can receive the best quality that its resources are capable of processing (see column 5, lines 42-51, weights are given to certain operating characteristics of receiving terminals and the encoding rate is determined from the table defining the weights based on the receiver's operating characteristics). Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to employ a pre-compiled table of encoding rates corresponding to conditions of the receiving end, such as bandwidth limitation. The motivation to utilize the encoding rate table of Kenyon into the content delivery program of Karczewicz is that the CPU need not do any calculations for each receiving terminal requesting data transmission.

For claim 16, Karczewicz discloses a content delivery program comprising the steps of (b) determining a quality level of the content to be delivered to the terminal when bandwidth data indicating a bandwidth of a network to which the terminal is connected is received (see paragraph 17, lines 8-12, the bit rate used for encoding is determined in response to receiving indication of a permitted channel communication rate), generating the content at the quality level determined in step (b), and transmitting the content generated in step (c) to the terminal (see paragraph 17, lines 12-15, selected bit rate is used to encode the video data and sent to the receiver). Karczewicz does not explicitly teach preparing and storing quality-management information indicating correspondences between bandwidths and quality levels of the content. Kenyon, from the same field of endeavor, teaches the provision of using a table indicating various terminal operating characteristics, including bandwidth, and correlating these characteristics with a specific quality video stream so that the terminal can receive the best

quality that its resources are capable of processing (see column 5, lines 42-51, weights are given to certain operating characteristics of receiving terminals and the encoding rate is determined from the table defining the weights based on the receiver's operating characteristics). Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to employ a pre-compiled table of encoding rates corresponding to conditions of the receiving end, such as bandwidth limitation. The motivation to utilize the encoding rate table of Kenyon into the content delivery program of Karczewicz is that the CPU need not do any calculations for each receiving terminal requesting data transmission.

9. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karczewicz in view of Kenyon as applied to claim 6 above, and further in view of Hinderks (US 5,706,335).

For claim 8, Karczewicz in view of Kenyon do not explicitly teach that the content is data representing sound, and is generated at the quality level by changing a sampling rate of the data according to the quality level determined in step (b). Hinderks, from the same field of endeavor, teaches the provision of encoding and down sampling speech audio over a transmission channel with limited bandwidth (see column 3, line 63 to column 4, line 7, the sampling rate is reduced at the analog to digital conversion and then compressed using MPEG standards to accommodate a lower transmission rate). Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to use audio instead of video in the program of Karczewicz and Kenyon. The motivation to combine these teachings is that the audio is able to be compressed to be transmitted at a rate as low as 28.8 kbps.

For claim 9, Hinderks teaches that the sound input can come from a microphone (see column 3, lines 47-51).

10. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karczewicz in view of Kenyon as applied to claim 6 above, and further in view of Jones et al. (US 6,141,341).

For claim 10, Karczewicz and Kenyon do not explicitly disclose that the content is data representing sound, and is converted into character data according to the quality level determined in step (b). However, Jones teaches that use of speech-to-text to take VoIP audio data and converting it into character data and sending it to a receiver (see column 7, lines 35-38 and 53-56, speech-to-text processors can be integrated to send text data to the receiver instead of the voice data). Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to include a sound to character data converter. The motivation to incorporate the speech-to-text processor of Jones into the system of Karczewicz and Kenyon is that any network interface should be capable of receiving text data, which means that no matter how low the bandwidth is on the interface used by the terminal, it can still receive the data transmission.

11. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karczewicz in view of Kenyon as applied to claim 6 above, and further in view of Chithambaram et al. (US 6,674,445).

For claim 11, Karczewicz in view of Kenyon do not explicitly teach that the content is data representing a map, and is generated at the quality level by changing an amount of objects to be included in the data, according to the quality level determined in step (b). Chithambaram, from a similar field of endeavor, teaches the provision of sending map images to a wireless PDA

comprising map images and object data pertaining to a specific geographical location, wherein the map images are generalized by removing detail without losing shape information, and the object data is encoded to provide the required precision using a fewer number of bytes. (see column 4, lines 17-33). Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to include the ability to transmit map data in an encoded format to fit a specific bandwidth of the receiving terminal. The motivation to combine the teaching of Chithambaram into the program of Karczewicz and Kenyon is that map data can be compressed without losing the quality needed on the small screen of a device such as a PDA.

For claim 12, Karczewicz and Kenyon do not teach that the plurality of priorities are assigned to a plurality of types of objects in advance, and at least one priority of objects to be included in the data according to the quality level determined in step (b) is present in the quality-management information. Chithambaram teaches that the vector objects include spatial indexing information, and that objects are filtered so that only objects that fall within a specified view on the vector map will be downloaded at a given time. This is done to ensure compact and efficient use of the data transmission channel and storage capacity of the receiving device.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis Alia whose telephone number is (571) 270-3116. The examiner can normally be reached on Monday through Friday, 8am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on (571) 272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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